

I claim:

1 1. A method for adjusting the frequency response of a speaker system,
2 comprising the steps of:

3 anticipating a main speaker low frequency sonic output from pre-determined main
4 speaker low frequency characteristics;

5 determining compensation variables configured to adjust the main speaker sonic
6 output;

7 inputting the compensation variables into a user interface;

8 receiving an input signal;

9 producing a high-frequency signal from the input signal in response to the
10 compensation variables.

1 2. The system of claim 1, further including the step of passing the high-
2 frequency signal to a main speaker of the speaker system.

1 3. A crossover system for adjusting the frequency response of a speaker
2 system comprising:

3 a user interface configured to receive user-adjustable variables indicative of main
4 speaker low frequency characteristics; and

5 a compensation circuit configured to produce a desired high-pass signal from an
6 input signal in response to the user-adjustable variables.

1 4. The system of claim 3, wherein the compensation circuit further comprises:
2 a desired transfer function circuit having frequency response characteristics
3 analogous to a desired crossover-main speaker combination;
4 an equivalent circuit having frequency response characteristics analogous to a main
5 speaker; and
6 a deconvolution circuit configured to deconvolve the main speaker characteristics
7 from the desired crossover-main speaker combination characteristics.

1 5. The system of 3, wherein the user adjustable variables comprise a main
2 speaker low frequency cutoff frequency.

1 6. The system of 3, wherein the user adjustable variables comprise a main
2 speaker low frequency damping factor.

1 7. The system of 3, wherein the user adjustable variables comprise a speaker
2 sensitivity factor.

1 8. The system of 3, wherein the user adjustable variables comprise a speaker
2 enclosure type.

1 9. The system of 3, wherein the user adjustable variables comprise a gain
2 factor.

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1 10. A method for adjusting the frequency response of a speaker system,
2 comprising the steps of:
3 determining undesired sonic output characteristics for a main speaker; and
4 compensating for the undesired characteristics.

1 11. The method of claim 10, wherein the compensating step further comprises
2 the steps of:
3 inputting user adjustable settings indicative of main speaker low frequency
4 characteristics; and
5 producing a desired frequency response characteristics in response to the user
6 adjustable settings.

1 12. The method of claim 11, wherein the producing step further comprises the
2 steps of:
3 generating a combined system response from the user adjustable settings, the
4 combined system response having frequency response characteristics of a desired
5 combined system;
6 generating an equivalent speaker response from the user adjustable settings, the
7 equivalent speaker response having frequency response characteristics of the main speaker;
8 and
9 deconvolving the equivalent speaker response from the combined speaker response
10 to produce a compensated response.

1 13. The method of claim 11, wherein the speaker characteristics comprise a low
2 frequency cutoff frequency.

1 14. The method of claim 10, wherein the speaker characteristics comprise a low
2 frequency damping factor.

1 15. The method of claim 10, wherein the speaker characteristics comprise a
2 speaker sensitivity factor.

1 16. The method of claim 10, wherein the speaker characteristics comprise a
2 speaker enclosure type.

1 17. A system for adjusting the frequency response of a speaker system,
2 comprising:

3 means for inputting user adjustable settings that define low frequency
4 characteristics of a main speaker of the speaker system;

5 means for receiving an input signal; and

6 means for producing a high-frequency signal from the input signal in response to
7 the user adjustable setting.

1 18. The system of claim 17, wherein the means for producing the high-
2 frequency signal further comprises means for setting a cutoff frequency for the high-
3 frequency signal.

1 19. The system of claim 17, wherein the means for producing the high-
2 frequency signal further comprises means for setting a gain for the high-frequency signal.

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